

**REMARKS/ARGUMENTS**

No amendments have been made to the claims. The Applicant notes that claims 1-7, 9, 10, 12-19, 21-26, 28-34, 36, and 37 are currently pending rather than 1-37 as indicated by the Examiner.

**Finality of Office Action**

The Applicant respectfully suggests that the Examiner has improperly made Final the Office Action mailed November 28, 2007. From MPEP 706.07(a):

A second or any subsequent action on the merits in any application or patent involved in reexamination proceedings should not be made final if it includes a rejection, on prior art not of record, of any claim amended to include limitations which should reasonably have been expected to be claimed. See MPEP § 904 et seq.

The Examiner has introduced new grounds of rejection, including new grounds of rejection of the independent claims under 35 U.S.C. 103(a) based on the newly cited LaMedica Jr. reference. Although the claims were amended, the Applicant's last reply on August 24, 2007 did not amend any claim to include limitations which should not have been reasonably expected to be claimed, as explained below.

The Applicant's amendments of August 24, 2007 added the primary limitation to independent claims 1, 14, 23 and 31 of:

a mobile voice-enabled communications device, the device comprising a microprocessor, a microphone connected to the microprocessor, a speaker connected to the microprocessor, and an auxiliary input/output device connected to the microprocessor.

This feature is a combination of features from the prior preamble of the claims and features of previous dependent claims which were previously searched.

In relation to independent claim 1 as amended, the features of former claim 11 3 (regarding the device being a voice-enabled mobile or wireless communications device) and former claim 13 (regarding the auxiliary output device being an auxiliary input/output device) were added. A further limitation that was added to the claim is that the test signal is produced external to mobile device via an audio generator – a similar feature was found in former claim 8. Similar features which were added to independent claims 14, 23 and 31 were also found in former dependent claims.

The remainder of the amendments were either clarifying amendments made for consistency with this new limitation, changes to the descriptors of various test and output signals to more clearly differentiate between them in accordance with 35 U.S.C. 112, or other clarifying amendments to improve the clarity and readability of the claims in accordance with 35 U.S.C. 112.

In sum, the amendments of August 24, 2007 did not add any previously unclaimed features, but instead either added features which were previously pending and previously searched, or were minor clarifying amendments made to improve the clarity and readability of the claims in accordance with 35 U.S.C. 112. Thus, amendments of August 24, 2007 did not amend any claim to include limitations which should not have been reasonably expected to be claimed. Thus, the Finality of the Office Action is improper. Accordingly, the Applicant requests that the Finality of the Office Action be withdrawn.

Should the Examiner not withdraw the Finality of the Office Action, a timely Advisory Action is requested (preferably in advance of the three-month due date of February 28, 2008).

35 U.S.C. 103(a)

The Office Action was issued following the United States Supreme Court's decision in the case of *KSR Int'l Co. v. Teleflex Inc.*, No. 04-1350 (April 30, 2007). The Examiner, by citing references and asserting a reason for combining elements from the references, appears to have elected to base the rejection upon a teaching,

suggestion or motivation to select and combine features from the cited references. The Applicant wishes to point out that the Supreme Court's KSR decision did not reject the use of the "teaching, suggestion or motivation" analysis as part of an obviousness analysis, characterizing the analysis as "a helpful insight" (KSR slip op. at 14-15).

When the Examiner chooses to base a 103(a) rejection upon a teaching, suggestion or motivation analysis, the Examiner must satisfy the requirements of such an analysis. In particular, the Examiner must demonstrate with evidence and reasoned argument that there was a teaching, suggestion or motivation to select and combine features from the cited references.

Because of the apparent ground for rejection, and in the absence of any alternate argument put forward by the Examiner, the only pending ground for rejection appears to be a "teaching, suggestion or motivation" analysis. In the event that the Examiner chooses to consider a different rationale for rejection, this would be a new ground for rejection not due to any action by the Applicant. The Applicant has a right to be heard on any new ground for rejection.

To establish a *prima facie* case of obviousness under the "teaching, suggestion or motivation" analysis, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

In the event that the cited references fail to disclose or suggest all of the elements recited in the claims, then combining elements from the references would not yield the claimed subject matter, regardless of the extent of any teaching, suggestion or motivation.

Moreover, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in

applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As the Examiner is aware, MPEP 2142 states:

To reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

### **Summary of Rejections**

The Examiner rejects claims 1-2, 7, 12, 21, 23-24, 26 and 28 under 35 U.S.C. 103(a) as being unpatentable over LaMedica Jr. (U.S. Patent No. 7,024,161 A1) and Bakis (U.S. Patent No. 5,822,718).

The Examiner rejects claims 13 and 30 under 35 U.S.C. 103(a) as being unpatentable over LaMedica Jr., Bakis and Konetski et al. (U.S. Patent No. 7,006,637).

The Examiner rejects claims 14-15, 19, 22 and 31-37 under 35 U.S.C. 103(a) as being unpatentable over LaMedica Jr. and Konetski et al.

The Examiner rejects claims 3-4, 9-10 and 15-17 under 35 U.S.C. 103(a) as being unpatentable over LaMedica Jr., Bakis, in further view of Harrel et al. (U.S. Patent App. Pub. No. 2003/0073408)

The Examiner also rejects claims 5-6 and 25 under 35 U.S.C. 103(a) as being unpatentable over Kates (U.S. Patent Pub. No. 2002/0176584 A1) and Keller (U.S. Patent Pub. No. 2004/037428 A1) in further of Official Notice.

### **Patentability of the claims**

The Applicant respectfully submits that the subject matter defined by the pending claims would have not have been obvious to a person of skill in the art at the time the invention was made in view of the above-noted references for the reasons set forth below. Reconsideration and withdrawal of the rejections under 35 U.S.C. 103(a) is requested for the following reasons.

The Applicant notes that the claimed invention is directed to a method of testing acoustic devices built into handheld systems such as wireless or mobile handhelds or other devices that have a built-in speaker and/or microphone and an auxiliary input/output device or device port. An example of such a device port is a built-in connection for a headset device. While it is not explicitly stated in the preamble of the claims that the method is a method of testing a built-in speaker and/or microphone of a mobile device, it is inherent in the claimed features in that the speaker and microphone under test are those of the mobile voice-enabled communication device. If a clarifying amendment to the preamble in this regard would result in the allowance of the application, the Applicant would be willing to make such an amendment.

### **Claims 1 and 23**

The Examiner has rejected independent claims 1 and 23 as being unpatentable under 35 U.S.C. 103(a) in view of LaMedica, Jr. and Bakis. This rejection is traversed for the reasons set forth below.

Claim 1 recites a method of testing the built-in microphone of the mobile device. An audio generator generates a microphone test signal (in electric form) which is output to an external speaker which generates an acoustic version of the microphone test signal. The output of the external speaker is picked up by the

microphone of the mobile device. The output of the microphone (in electric form) is routed to the auxiliary input/output (I/O) device via the microprocessor of the mobile device where it is output and analyzed on an external test system. The method is typically performed by, among other things, using specialized software on the mobile device which configures the processor to route the output signal from the built-in microphone to the auxiliary I/O port. Claim 23 is directed to a test system for performing a method in accordance with claim 1 which includes a mobile device having a processor configured (e.g., using the specialized software) to route the output signal from the built-in microphone to the auxiliary I/O port.

The Examiner states that LaMedica, Jr. discloses all of the features of claim 1 and 23 except for the test signal being a microphone audio test signal. The Examiner appears to suggest that the various signal processing steps which are claimed are disclosed in LaMedica, Jr. in terms of other test signals. This position is not supported by LaMedica, Jr.

LaMedica Jr. describes a method of remotely testing wireless devices (such as wireless telephones) and upgrading the software in the wireless devices by accessing the test set instrument and the wireless devices through a wireless network. LaMedica Jr. does not describe, nor suggest any methods of audio or acoustic testing of the built-in microphone or speaker of the wireless devices. The Examiner appear to rely primarily on the fact that LaMedica, Jr. tests a wireless device 114 having a microphone, speaker and auxiliary I/O using an external test set 101, and that the test set 101 includes a microphone and speaker (which are external to the wireless device). From this, the Examiner appears to infer the method of testing the microphone and speaker of the wireless telephone 114. The claimed invention involves various microphone test and output signals (in acoustic audio and electric audio forms) which are processed in a specific manner defined by the claims, with the resultant microphone electric audio output signal routed via the processor to the auxiliary input/output device where it is output and analyzed. While some of the device elements recited in the method of claim 1 appear in LaMedica, Jr., there is no teaching or suggestion to use them in the manner claimed.

The only description of how the microphone 108 and speaker 112 of the test set 101 are used appears in column 5, lines 27-35, where it is stated that the microphone and speaker may be used "for testing of audio wireless features, such as voice activation features". This suggests the microphone and speaker are used in testing relating to the proper operation of a feature of the wireless telephone which may use inputs of the microphone or outputs to the speaker (such as voice activation features). This does not suggest testing relating to the proper operation of the built-in microphone or speaker themselves. LaMedica, Jr. is more concerned with other features of the external test set 101 as described in the Abstract, i.e., the use of a video capturing device (camera 110) and a controller that captures the display of the wireless telephone and transmits this over the wireless network for analysis.

Nowhere does LaMedica, Jr. suggest audio testing which involves the testing for the proper operation of the built-in microphone and/or speaker themselves. Moreover, LaMedica, Jr. does not describe, nor suggest routing the microphone electric output signal from the built-in microphone to the auxiliary I/O port via the processor so that the microphone output signal may be output to the test set 101 as required by claims 1 and 23. In fact, LaMedica, Jr. teaches away from this possibility. At column 4, lines 16 to 24, LaMedica, Jr. states limited data is available to the test set 101 from the wireless telephone 114 via the I/O port 115 of the wireless telephone 114:

The controller also provides instructions to the telephone through the port, for some test operations. For example the controller may instruct the telephone to initiate a call to a specified number and/or to access a particular network service feature. Some limited data from the wireless telephone is available to the controller via the port 115. However, not all of the data output by the wireless telephone 114 and the operating characteristics are available to the controller 102 through the I/O port 115.

The Examiner cannot assume that the electric output signal of the microphone is routed to the test set 101 via the port 115, particularly in view of the above

statements from LaMedica, Jr. regarding the limited use of the port 115. The claimed step of routing the microphone electric output signal from the built-in microphone to the auxiliary I/O port via the processor is one of the key inventive features of claims 1 and 23, and was not known or performed prior to the Applicant's invention. To assume that LaMedica, Jr. operates in this manner is to use the Applicant's own disclosure as a roadmap to interpret this reference - which is improper. Moreover, any acoustic audio output of the speaker 112 of the test set 101 in LaMedica, Jr. need not be generated by an electric audio signal produced on an audio generator external to the wireless telephone as required by the claims 1 and 23. For example, acoustic audio output of the speaker 112 may be based on data transmitted from to the test set 101 over the wireless network. Again, the Examiner is using the Applicant's own disclosure to construe the drawings of LaMedica, Jr. which is not permitted.

Thus, LaMedica, Jr. does not describe all of the features of claim 1 and 23 except for the test signal being a microphone audio test signal, and in fact, teaches away from such features. While the Examiner infers many of the claimed features from the drawings, this is not supported by the scant description of LaMedica, Jr. and its teachings to the contrary (i.e., testing the proper operation of voice features not acoustic device components such as the built-in speaker and microphone). Contrary to the inference that the Examiner has made from the drawings, the skilled person reading LaMedica, Jr. would assume that prior art solutions (such as that described in the background of the present invention) would be used to test the built-in speaker and microphone if this were necessary. Given that LaMedica Jr. does not describe the acoustic testing of the built-in speaker and microphone in any way, it is only with impermissible hindsight based on the Applicant's own disclosure that the claimed method of using the auxiliary input/output device during testing can be inferred.

The Examiner relies on Bakis as teaching a microphone audio test signal. No other reliance on Bakis made by the Examiner. Bakis is directed to testing standalone microphones and is unrelated to testing the built-in microphone of a mobile device. In particular, Bakis does not describe or suggest routing the



microphone output signal from the built-in microphone to the auxiliary I/O port via the processor and so fails to overcome the deficiencies of the teachings of LaMedica Jr.

Moreover, the skilled person would not combine LaMedica Jr. with Bakis. This type of testing is normally performed by an acoustic microphone manufacturer and using a wide variety of methods. The method suggested in Bakis is not applicable to testing an acoustic microphone assembled and being part of a device such a handheld or telephone. Thus, Bakis describes a solution for a different problem that is not applicable to the claimed invention. In particular, Bakis suggests connecting the microphone to the sound card which cannot be performed if the microphone is a part of a handheld device. Thus, Bakis teaches away from the testing of microphones and speakers which are assembled into handheld devices that does not permit the required direct electrical connection. The claimed invention solves the connection problem by using specialized software and (re)routing the electrical signals inside the mobile device.

In view of the above, it is submitted that the Examiner has failed to establish a *prima facie* case of obviousness in relation to independent claims 1 and 23 as LaMedica Jr. with Bakis fails to describe, teach or suggest each and every feature of the claims. Moreover, there is no reason to even combine the references. Claims 2-7, 9, 10, 12, 13 and 24-26 and 28-30 depend directly or indirectly from independent claims 1 or 23, and are considered to be directed to patentable subject matter for at least the same reasons given for the base independent claims from which they depend. Withdrawal of the rejections under 35 U.S.C. 103(a) is requested.

#### Claims 14 and 31

The Examiner has rejected independent claims 14 and 31 as being unpatentable under 35 U.S.C. 103(a) in view of LaMedica, Jr. and Konetski et al. This rejection is respectfully traversed for the reasons set forth below.

Claim 14 recites a method of testing the built-in speaker of the mobile device.

An audio generator generates a speaker test signal which is input (in electric form) to the mobile device via the auxiliary I/O device. The input is routed by the microprocessor of the mobile device to its built-in speaker which generates an acoustic version of the speaker test signal in electric form. The output of the speaker is picked up by an external microphone which outputs the signal in electric form to an external test system where it is analyzed. The method is typically performed by, among other things, using specialized software on the mobile device which configures the processor to receive the test signal from the auxiliary I/O port and route it to the built-in speaker. Claim 31 is directed to a test system for performing a method in accordance with claim 14 which includes a mobile device having a processor configured (e.g., using the specialized software) to receive the test signal from the auxiliary I/O port and route it to the built-in speaker.

The Examiner states that LaMedica, Jr. describes all of the features of claims 14 and 31 except for the test signal being a speaker test audio signal. Rather than outputting the microphone electric audio output signal as in claims 1 and 23, in claims 14 and 31 a speaker electric audio test signal is input via the auxiliary I/O device of the mobile device, and then routed via the processor to the built-in speaker for output. Again, while at least some of the device elements recited in the method of claim 14 and system of claim 31 appear in LaMedica, Jr., there is no disclosure nor teaching or suggestion to use them in the manner claimed.

Any acoustic audio signal produced on the wireless telephone 114 as a test signal (a speaker test signal is not described in LaMedica, Jr. as acknowledged by the Examiner), need not be transmitted to the wireless telephone 114 as an electric audio signal via the port 115, nor does it need to be produced via an audio generator external to the mobile voice-enabled communications device. For example, it could be transmitted as a WAV file or other data file via the port 115, and could be received on the test set 101 via the wireless network rather than generated by the test set 101 (no audio generator is described in LaMedica Jr.). In fact, LaMedica, Jr. describes the test set 101 receiving control information and test instructions from a central station and so teaches away from local generation of test data, and in particular an electric audio signal. Again, it is only with impermissible

hindsight based on the Applicant's own disclosure that the Examiner's interpretation of LaMedica, Jr can be inferred.

In terms of Konetski et al., he describes a speaker with a self-diagnosis circuit which uses a speaker test signal. While speaker test signals and output signals using the self-diagnostic circuit are described at column 5 and elsewhere, Konetski et al. does not describe the use of speaker test audio signals (in acoustic and electric forms) in the manner claimed, nor does Konetski et al. cure the other deficiencies of LaMedica, Jr. For example, from the Applicant's review of Konetski et al., a speaker electric audio test signal is not input into the self-diagnosis circuit via an auxiliary I/O device, nor does it provide the other steps or features of the claims which result from this difference.

Moreover, a speaker with a self-diagnosis circuit is not equivalent to a mobile communication device adapted to perform a test of a built-in speaker as in claims 14 and 31. In contrast, Konetski et al. suggests using a self diagnostic circuit for the testing of stand alone speaker systems such as home theatre speaker systems. Thus, Konetski et al. is unrelated to the problem of the present application and LaMedica Jr. and so the skilled person would not combine Konetski et al. with LaMedica Jr.

In view of the above, it is submitted that the Examiner has failed to establish a *prima facie* case of obviousness in relation to independent claims 14 and 31 as LaMedica Jr. with Konetski et al. fails to describe, or teach or suggest each and every feature of the claims. Moreover, there is no reason to even combine the references. Claims 15-19, 21, 22 and 24-26 and 32-34, 36, and 37 depend directly or indirectly from independent claims 14 or 31, and are considered to be directed to patentable subject matter for at least the same reasons given for the base independent claims from which they depend. Withdrawal of the rejections under 35 U.S.C. 103(a) is requested.

The Applicant in prior responses has already commented on the differences over the claimed invention and Harrel et al., Kerrel et al. and Kates et al. applied by

the Examiner to various dependent claims. As the independent claims are believed to be non-obvious for the reasons set forth above, no further comment on these references is believed to be necessary.

Favourable reconsideration and allowance of the application are respectfully requested. If a telephone call would advance the application, please contact the undersigned.

Respectfully submitted,

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